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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/700,625

11/05/2003

Jianmin Wang

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4865

49745 7590 03/22/2007  
SEAGATE TECHNOLOGY LLC  
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EXAMINER

AKANBI, ISIAKA O

ART UNIT

PAPER NUMBER

2886

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/700,625	WANG ET AL.	
	Examiner	Art Unit	
	Isiaka O. Akanbi	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2006.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 12-14, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2-11 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>22 February 2007</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Amendment***

The amendment file 19 December 2006 has been entered into this application. Claims 2-4, 12-14 and 19-20 are cancelled.

### ***Information Disclosure Statement***

The information disclosure statement file 19 December 2006 and 22 February 2007 has been entered and reference considered by the examiner.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosencwaig et al. (4,522,510) in view of Toida (5,428,447).

Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosencwaig in view of Toida. The reference of Rosencwaig teaches of an apparatus/method for measuring surface topography of a surface of claims 1 and 11, comprising a linearly polarized light source (20) that generates a light beam, optics (16/28) that focus the light beam on a surface (18) to be measured such that a normally incident beam deflection is provided, a long working microscope objective (16) positioned to receive the light beam and output a converging light beam (col. 2, line 28-31), a polarizing beam splitter (24) positioned to receive as an input the and produces as an output light beam with the first polarization and wherein the step of directing a beam of light includes transmitting the converging beam through a polarizing beam splitter in a direction normally incident to the surface (18)(fig. 1), a position sensitive detector (32) positioned to detect the reflected beam (fig. 1) and discloses the use of a wave plate (26)

(i.e.  $\lambda/4$  wave plate) that receives the light beam from the linearly polarized light source. The reference of Rosencwaig is silent regarding the optics specifically having a half-wave plate that receives the light beam, however the use of (i.e.  $\lambda/2$  or  $\lambda/4$  wave plate) to receive light beam from a linearly polarized light source is known in the art. The reference of Toida teaches of half-wave plate (128) that receive light beam (figs. 5-7)(col. 26, line 36-col. 29, line 5-10). It would have been obvious to one having ordinary skill in the art at the time of invention to provide optics that include a half-wave plate that receives the light beam because it is easier to adjust/rotates the direction of the polarization of the beam than adjusting the source.

As to claims 5 and 15, Rosencwaig and Toida disclose everything claimed, as applied to claims 1 and 11, in addition Rosencwaig discloses wherein the optics further include a quarter-wave plate (26) positioned to receive as an input the light beam with the first polarization and output a beam in a direction normally incident to the surface, the reflected beam from the surface being reflected by the quarter-wave plate towards the position sensitive detector (32) and wherein the step of changing the polarization includes passing the reflected beam through a quarter-wave plate that changes the polarization of the reflected beam to the second polarization from the first polarization (fig. 1).

As to claims 6 and 16, Rosencwaig and Toida disclose everything claimed, as applied to claims above, comprising a half-wave plate and wherein the step of directing the reflected beam includes reflecting the reflected beam perpendicularly at the polarizing beam splitter (24) towards the position sensitive detector (32)(fig. 1). The reference of Rosencwaig and Toida is silent regarding wherein the first polarization is p-polarization and the second polarization is s-polarization because there is no reason to specify which polarization is first or second since the wave-plate can be set to a default or un-actuated polarizing state (s or p). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to provide a first polarization that is p-polarization and a second polarization that is s-polarization for the purpose of providing a light beam having a polarization state (p or s) at a level determined by the detector.

As to claim 7, Rosencwaig and Toida disclose everything claimed, as applied to claim above, in addition Rosencwaig discloses wherein the polarizing beam splitter (24) includes a  $45^\circ$  reflective surface positioned to reflect the beam reflected from the surface in a direction perpendicular to the direction normally incident to the surface (fig. 1).

As to claim 8, Rosencwaig and Toida disclose everything claimed, as applied to claim above, in addition Rosencwaig discloses wherein the long working microscope objective (16) outputs the converging light beam in a direction perpendicular to a normally incident direction to the surface.

As to claim 9, Rosencwaig and Toida disclose everything claimed, as applied to claim above, in addition Rosencwaig discloses wherein the optics further include a polarizing beam splitter (24) having a 45° reflective surface positioned to reflect the converging light beam from the long working microscope objective (16) towards the surface (32) in a normally incident direction to the surface.

As to claim 10, Rosencwaig and Toida disclose everything claimed, as applied to claim above, in addition Rosencwaig discloses wherein the optics further include a quarter-wave plate (26) positioned to receive as an input the light beam with the first polarization from the polarizing beam splitter and output a beam that is normally incident of the surface, with a reflected beam from the surface having the second polarization and directed by the quarter-wave plate through the polarizing beam splitter in a direction normal to the surface towards the position sensitive detector (32)(fig. 1).

As to claim 17, Rosencwaig and Toida disclose everything claimed, as applied to claim above, in addition Rosencwaig discloses wherein the step of directing a beam of light includes directing the converging (16) beam in a direction perpendicular to a normally incident direction to the surface towards a reflective surface of a polarizing beam splitter (24) that reflects the converging beam towards the surface (32) in a direction normally incident to the surface (fig. 1).

As to claim 18, Rosencwaig and Toida disclose everything claimed, as applied to claim above, in addition Rosencwaig discloses wherein the step of directing the reflected beam includes transmitting the reflected beam through the polarizing beam splitter (24) in a normal direction to the surface towards the position sensitive detector (32).

#### **Additional Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art apparatus/method for measuring surface topography of a surface that may anticipate or obviate the claims of the applicant's invention.

### ***Response to Arguments***

Applicant's arguments/remarks, see pages 6-9, filed 19 December 2006, with respect to the rejection(s) of claim(s) 1 and 11 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of claim amendment.

As to applicant arguments on page 8, that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine would have been obvious to one having ordinary skill in the art at the time of invention to combine Rosencwaig and Toida in order to provide a light beam having a polarization state (p or s) at a level determined by the detector. Further, in response to applicant's argument that the prior art was not configured "to use of optics such as an incident beam having a first polarization and a reflected beam from the surface having a second polarization different from the first polarization, with the beams being normally incident to the surface", it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

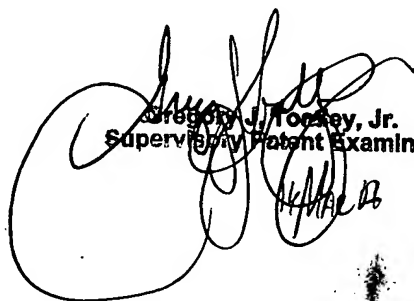
### **Fax/Telephone Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi  
March 8, 2007

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner